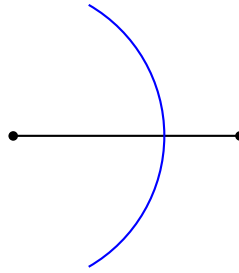


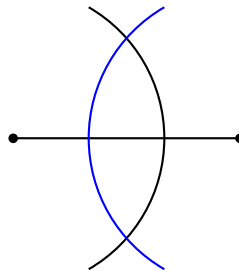
Compass and Straightedge Construction of Perpendicular Bisector

One can construct the perpendicular bisector of a given line segment using compass and straightedge as follows:

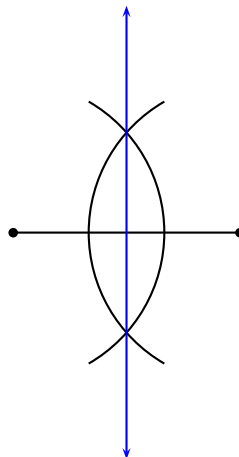
- (1) Set the compass length for slightly more than half the length of the line segment. With one point of the compass on one of the endpoints of the line segment, draw an arc extending to both sides of the line segment.



- (2) Using the same compass length as in the previous step, repeat the previous step for the other endpoint of the line segment. (This arc should intersect the arc from the previous step in two places. If not, extend the arc from the previous step.)



- (3) Connect the intersections of the arcs from the previous two steps.



This construction is justified because the points determined in the third step are equidistant from the two endpoints and thus must lie on the perpendicular bisector.